




# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,152	03/24/2004	Charles B. Roxlo	10021.002310 (P0307)	5267
31894	7590	11/02/2004	EXAMINER	
OKAMOTO & BENEDICTO, LLP			DINH, JACK	
P.O. BOX 641330			ART UNIT	PAPER NUMBER
SAN JOSE, CA 95164			2873	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p>10/808,152</p>	<p><b>Applicant(s)</b></p> <p>ROXLO ET AL.</p>	
	<p><b>Examiner</b></p> <p>Jack Dinh</p>	<p><b>Art Unit</b></p> <p>2873</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/> Paper No(s)/Mail Date <u>0604</u>.</p> | <p>4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br/> Paper No(s)/Mail Date. <u>1004</u>.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input checked="" type="checkbox"/> Other: <u>DETAILED ACTION</u>.</p> |
|--|--|

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10 and 16-20, drawn to an imaging apparatus comprising diffractive light modulators, classified in class 359, subclass 291.
  - II. Claims 11-15, drawn to a method of imprinting a pattern on a substrate without using a mask, classified in class 355, subclass 67.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process can be used to make either product in claim 1 or 16.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Patrick D. Benedicto on 10/25/04 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-10 and 16-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

2. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2873

3. Claims 1-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's acknowledged prior art (figures 1-4 and pages 1-5 of the specification), in view of Chakrabarti (US Patent 6,646,623)

Regarding claims 1 and 6-10, the Applicant's acknowledged prior art (figure 4) is interpreted as disclosing an imaging apparatus having a known modulator array **193** comprising a first set of diffractive light modulators along a column of a light modulator array, and a second set of diffractive light modulators along a row of the light modulator array. The Applicant's acknowledged prior art discloses all the claimed limitations except that the diffractive light modulators in the second set being arranged such that optically active areas along the row are spaced apart. Within the same field of endeavor, Chakrabarti (figure 13) is interpreted as disclosing a modulator array wherein the optically active areas **DM** along the row are spaced apart. Spacing the modulators apart would be well within the knowledge of one skill in the art, if so desired. In addition, the required degree of spacing can be found through experimentation. It is considered not inventive to find the optimum range by routine experimentations. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to space apart the modulating elements, as taught by Chakrabarti, for the purpose of selecting a preferred modulating arrangement.

Regarding claim 2, the Applicant's acknowledge prior art is interpreted as further disclosing that the diffractive light modulators in the first set and the second set comprise ribbon light modulators (page 1, line 22).

Regarding claims 3-5, the Applicant's acknowledge prior art (figure 4) is interpreted as further disclosing a light source 191, a projection lens 196, wherein the light modulator array and the microlens array are in a same integrated packaging.

Regarding claims 16-19, the Applicant's acknowledged prior art (figure 4) is interpreted as disclosing a lithography system comprising a light modulator array 193 comprising a plurality of diffractive light modulators arranged in columns and a lens 196 configured to project modulated light from the light modulator onto a substrate being patterned. The Applicant's acknowledged prior art discloses all the claimed limitations except that the diffractive light modulators within the columns having a first pitch and the columns being spaced according to a second pitch. Within the same field of endeavor, Chakrabarti (figure 13) is interpreted as disclosing a modulator array wherein the diffractive light modulators **DM** within the columns having a first pitch and the columns being spaced according to a second pitch. Spacing the modulators apart would be well within the knowledge of one skill in the art, if so desired. In addition, the required degree of spacing can be found through experimentation. It is considered not inventive to find the optimum range by routine experimentations. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to space apart the modulating elements, as taught by Chakrabarti, for the purpose of selecting a preferred modulating arrangement.

Regarding claim 20, the Applicant's acknowledge prior art (figure 4) is interpreted as further disclosing that the light modulator array and the microlens array are in a same integrated packaging.

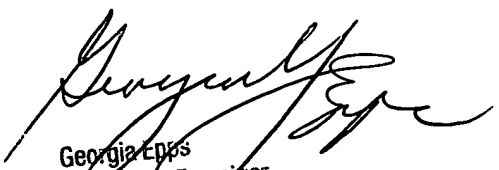
***Other Information/Remarks***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is 571-272-2327. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack Dinh

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800